

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

Improving 9-1-1 Reliability)	PS Docket No. 13-75
)	
Reliability and Continuity of Communications)	PS Docket No. 11-60
Networks, Including Broadband Technologies)	

**COMMENTS OF THE
VIRGINIA STATE CORPORATION COMMISSION**

Introduction

The Division of Communications of the Virginia State Corporation Commission (“VSCC Staff”) respectfully submits these Comments in response to the Federal Communications Commission’s (“FCC”) Notice of Proposed Rulemaking (“Notice”) released on March 20, 2013, in PS Docket Nos. 13-75 and No. 11-60. The Notice seeks comment “on approaches to ensure the reliability and resiliency of the communications infrastructure necessary to ensure continued availability of the Nation’s 9-1-1 system, particularly during times of major disaster.”¹ On January 10, 2013, the Public Safety and Homeland Security Bureau (“PSHSB”) issued its report entitled Impact of the June 2012 Derecho on Communications Networks and Services: Report and Recommendations (“PSHSB Derecho Report”). Specifically, the Notice seeks comment on proposed approaches to address the recommendations identified in the PSHSB Derecho Report.

As the Notice recognizes, the VSCC Staff also conducted an investigation of the 911² outages in Virginia arising from the June 29, 2012 Derecho (“June 29 Derecho”). Our comments

¹ Notice p. 1.

² The FCC and the PSHSB typically use “9-1-1” and the VSCC Staff uses “911.” 9-1-1 and 911 are interchangeable terms in these comments.

include the findings and recommendations from our investigation. We believe the results of our investigation may provide the FCC with additional insight to assist with its determinations regarding this important public safety matter.

Background

Early in the afternoon of June 29, 2012, a severe and destructive storm with widespread wind gusts of over 70 mph tracked across a large section of the Midwestern United States. The storm progressed into the Mid-Atlantic States in the afternoon and evening. Late in the evening, the storm continued to expand and impacted significant portions of Virginia, Maryland, and the District of Columbia with severe straight-line winds reported as high as 87 mph. By the morning of June 30, there was an unprecedented and critical loss of 911 services impacting public safety answering points (“PSAPs”) and citizens in the Northern Virginia area.

On July 3, 2012, the VSCC issued an Order Establishing Investigation (“July 3, 2012 Order”)³ directing its Staff to investigate the loss of 911 emergency call services from the June storm. The July 3, 2012 Order required the Staff to prepare a report containing preliminary findings by September 14, 2012 (“Preliminary Findings Report”), and file a report with final findings and recommendations by December 31, 2012 (“Final Report”).⁴

VSCC Staff Investigation

The primary focus of our investigation for the Preliminary Findings Report was determining the causes of the 911 outages in Virginia. The immediate cause of the 911 service outages in Northern Virginia was the failure of a backup generator to start in each of Verizon’s Arlington and Fairfax central offices when commercial power was lost. Ultimately, there was a

³ *Commonwealth of Virginia, ex rel. State Corporation Commission Ex Parte: In the matter of investigating 911 emergency call service outages and problems, Case No. PUC-2012-00042, Order Establishing Investigation (July 3, 2012).*

⁴ At the request of the VSCC Staff, the date for filing the final report was extended to January 17, 2013.

total loss of 911 capabilities to the Prince William County, Fairfax County, Manassas, and Manassas Park PSAPs for a significant period of time. In addition, 21 other PSAPs in Virginia were impacted and experienced such problems as the failure of Verizon to deliver Automatic Location Information (“ALI”) and the loss of administrative and backup telephone lines. Overall, our preliminary findings showed that there were numerous and compounding errors, failures, and deficiencies on the part of Verizon that multiplied into a potentially catastrophic event exposing inherent weaknesses in Verizon’s service and associated 911 network design and maintenance in Virginia. A list of our preliminary findings is attached to these comments as Attachment 1.

The VSCC Staff’s review of the maintenance logs for the backup generators in the Arlington and Fairfax central offices showed a serious lack of compliance with Verizon’s internal maintenance and testing practices and procedures. We were particularly concerned whether the lack of testing and maintenance in those offices was indicative of a systematic deficiency throughout Verizon’s network.

Our Final Report identified a number of additional significant findings. These went beyond assessing the impact from the June 29 Derecho as we addressed (1) other maintenance and equipment problems in Verizon’s offices and (2) Verizon’s corrective actions and proposals both for the areas affected by the Derecho and in other parts of Virginia. A list of our final findings is attached to these comments as Attachment 2.

Overall, our Final Report recognized that Verizon had made significant progress in implementing numerous corrective actions initiated shortly after the June 29 Derecho. We were particularly encouraged by Verizon’s initiative to conduct power audits in central offices beyond those impacted directly by the June 29 Derecho.

However, our further investigation reinforced our preliminary concern that the backup generators in other offices in Virginia were also not being properly maintained and tested. We reviewed the 2011 and 2012 generator maintenance logs for a cross section of Verizon's offices in Virginia, and found many instances of lack of compliance with testing and maintenance procedures.

In addition, we evaluated the sixteen power audits conducted by Verizon for its 911 mission critical facilities in Virginia.⁵ The audits in those sixteen offices were primarily non-intrusive and visual in nature. While the audits did not include operational testing, they identified hundreds of abnormalities showing a broad range of problems from overall building deterioration to apparent lack of routine preventative maintenance.

VSCC Staff Recommendations

The goal of our 911 service investigation was, to the extent possible, to help prevent such a serious and potentially life threatening event like the one on June 29, 2012 from occurring again. We recognize that there are no "absolutes" to prevent all 911 service outages. However, the 911 outage following the June 29 Derecho in Northern Virginia **should not have occurred and was avoidable if Verizon had been properly and routinely testing and maintaining the generators in the Arlington and Fairfax offices.** In addition, the 911 outage exposed numerous other deficiencies and weaknesses inherent in Verizon's procedures, processes, and central offices that need to be corrected. We found that those deficiencies were not limited to the affected Northern Virginia offices, but were systemic throughout Verizon's offices in Virginia.

We are pleased that Verizon has implemented numerous initiatives to correct many of the deficiencies. However, it will take a concerted effort on Verizon's part to correct all the problems. This cannot be done overnight and in our view will likely require continued oversight

⁵ Verizon considers offices housing 911 Selective Router Tandems as 911 mission critical.

to ensure compliance. Therefore, the Final Report recommended that the VSCC adopt the following requirements:

- The VSCC 911 investigation docket should remain open.
- Verizon should be required to update and file quarterly corrective action progress reports with the VSCC.
- Verizon should correct all deficiencies and implement all recommendations identified in its power audits.
- Verizon should meet quarterly with the VSCC Staff to provide additional details, schedules, budgets, and updates on its corrective actions, audits, inspections, and other initiatives intended to correct its network deficiencies in Virginia.
- Verizon should continue to meet and cooperate with the PSAPs to ensure their concerns are addressed.
- By the end of 1Q 2013, Verizon should develop and review with the VSCC Staff a schedule to conduct audits (including power, mechanical, and HVAC equipment) in all remaining Virginia offices. Verizon should permit the VSCC Staff to monitor any audit as it is conducted.
- Recognizing the time required to complete the audits, at a minimum, batteries should be inspected and tested in all Virginia locations by the end of 2Q 2013.
- Verizon should provide the VSCC Staff with copies quarterly of any additional or revised power audits conducted for offices in Virginia.
- Verizon should provide the VSCC Staff with any plans to conduct additional inspections or audits for switching and/or transport equipment and operational audits in Virginia. Copies of the results from any such inspections and audits should be provided to the VSCC Staff on a quarterly basis.

- Verizon should establish a plan to address the availability and sufficiency of spare parts for manufacturer discontinued equipment.
- The Staff should continue to communicate and meet with PSAPs and the 911 community.
- Verizon should maintain and update a complete inventory of its 911 service infrastructure.
- Verizon should provide a quarterly report to the VSCC Staff identifying any problems found in the monthly testing of generators in offices in Virginia. The report should identify the office and the corrective action undertaken and include applicable dates.
- The VSCC Staff should file an annual status report with the VSCC that includes recommendations on continuing the various requirements on Verizon and/or recommendations on any changes or additions to such.
- The VSCC Staff should evaluate the PSHSB Derecho Report released on January 10, 2013, and advise the VSCC of any additional recommendations we may determine are warranted based on that report.

On February 22, 2013, the VSCC issued an Order in (“VSCC February 22 Order”)⁶ finding that the VSCC Staff’s recommendations were reasonable and responsive to the investigation and should be implemented by the Staff and Verizon forthwith. The docket remains open to monitor and facilitate the recommendations and receive the required reports.

Discussion

The PSHSB Derecho Report recommends that the FCC consider action in four areas. They are: (1) 9-1-1 circuit auditing, (2) central office backup power, (3) diversity of monitor and

⁶ *Commonwealth of Virginia, ex rel. State Corporation Commission Ex Parte: In the matter of investigating 911 emergency call service outages and problems, Case No. PUC-2012-00042, Order (February 22, 2013).*

control links, and (4) revised PSAP notification rules. Our investigation raised similar concerns and we support the FCC's efforts to take action to improve procedures, accountability, and other requirements in these areas.

The June 29 Derecho outage ultimately exposed many weaknesses in Verizon's network and procedures, but the failure of central office backup power was the most egregious. We must not forget that if the generators had started in the Arlington and Fairfax central offices, there would not have been a 911 service outage in Northern Virginia. The Notice suggests that "most service providers recognize the importance of these practices in principle, but they may give way in the daily press of business, with potentially dire consequences."⁷ Verizon's failure to test and maintain the backup generators routinely in the Arlington and Fairfax offices (and many other offices) was unacceptable. Ensuring that all backup power systems are properly and routinely tested, maintained, and documented is the very minimum level of performance that should be met by all carriers. These critical operational procedures have been the industry's longstanding standards and ones where voluntary compliance with best practices should never have been needed.

The Notice seeks comment on "the appropriate balance between voluntary best practices and Commission mandates as they relate to 9-1-1 communications."⁸ Voluntary best practices and mandated regulations both have their strengths and weaknesses. It is hard to envision the industry developing best practices that are voluntary in nature yet adequate to address all public safety concerns. On the other hand, it is unlikely that a set of regulations could be sufficiently detailed to address all the necessary operational parameters and situations. We believe that balance will best be achieved by focusing efforts on identifying public safety needs and

⁷ Notice, p. 8.

⁸ Ibid, p. 10.

preventing potentially life threatening events. Finding a carrier to be in noncompliance with a rule or regulation can generally be an effective tool for regulators, but in the public safety arena the priority must be on prevention versus determining blame after a tragic event.

The Notice expresses interest in “comments from state commissions and PSAPs on the approaches they use to oversee 9-1-1 connectivity.”⁹ The VSCC’s Rules Governing Enhanced 911 (E-911) service (Chapter 425) address certain provisioning and rate requirements of local exchange carriers (“LECs”) providing 911 service (Attachment 3). VSCC Rule 5-425-40 A requires a LEC providing 911 service to “design, construct, maintain and operate its facilities to minimize interruptions to services.” In addition, this rule requires a LEC to consult and communicate with the PSAP on service requirements and implementation. Unfortunately, as our investigation subsequently determined, the direct cause of the 911 outages in Northern Virginia from the June 29 Derecho resulted from Verizon not following its own procedures for testing, maintaining, and operating the backup generators in its Arlington and Fairfax central offices for an extended period of time.

The VSCC February 22 Order adopted a number of ongoing monitoring tools to verify Verizon’s compliance with the requirements set forth in that order. These include reporting and meeting requirements on corrective actions, requiring Verizon to conduct and submit power audits for all its Virginia offices, and filing backup generator maintenance exception reports quarterly. In addition, the VSCC Staff has been (and will continue) monitoring inspections and audits conducted in Verizon’s offices to assess their thoroughness and validity. Many of these monitoring requirements appear to be similar to those being considered in the Notice.

⁹ Ibid. p. 13.

Conclusion

The 911 service outages after the June 29 Derecho put thousands of citizens in Virginia at risk. Those outages were a direct result of Verizon's shortcomings. As the generator maintenance logs, audits, and other Verizon interrogatory responses in our investigation revealed, Verizon has allowed its equipment and facilities in many of its offices in Virginia to deteriorate.

Verizon has modified many of its practices to ensure a more timely response in emergencies, and we applaud its efforts to correct the underlying causes and problems that are apparent throughout its offices. However, these corrective (and continuing) efforts must be actively monitored and evaluated to ensure that Verizon undertakes all the necessary actions.

We encourage and support the FCC's efforts in this proceeding to ensure the reliability of 911 to all citizens in Virginia and the nation.

Respectfully submitted,
Virginia State Corporation Commission Staff

A handwritten signature in black ink, appearing to read "William Irby". The signature is fluid and cursive, with a large, stylized "W" and "I".

William Irby
Director
Division of Communications

May 13, 2013

VSCC STAFF PRELIMINARY FINDINGS

FROM

SEPTEMBER 14, 2012 STAFF REPORT

- Commission Rule 20VAC 5-425-40 A 1 requires a LEC providing 911 service to “design, construct, maintain, and operate its facilities to minimize interruptions to E-911 services.”
- Verizon was the only LEC in Virginia that experienced significant 911 service problems following the June 29 Derecho.
- The total loss of 911 capabilities to the Prince William County, Fairfax County, Manassas, and Manassas Park PSAPs was an extremely serious event and it is very fortunate that there were not catastrophic consequences to any citizens in Northern Virginia
- The Prince William County, Fairfax County, Manassas, and Manassas Park PSAPs were fully prepared to respond to the June 29 Derecho and were not responsible for the 911 service failures.
- The cause of the 911 service outages in Northern Virginia from the June 29 Derecho began with the failure of two backup generators that did not start automatically when commercial power was lost. Specifically, a generator in each of Verizon’s Arlington and Fairfax central offices did not start.
- A review of the maintenance logs for the backup generators in the Arlington and Fairfax central offices shows a lack of compliance with Verizon’s maintenance and testing procedures.
- The generator that failed to start in the Arlington office did not start during routine testing

conducted two days before the June 29 Derecho. The maintenance log indicated that work to the generator was needed.

- A total of nine generators (out of 136) failed to operate properly during the commercial power outages from the June 29 Derecho in Verizon's Mid-Atlantic region.
- The scope of 911 problems went well beyond the calling areas served by the Arlington and Fairfax central offices.
- ALI is an important component of 911 service. The lack of delivery of ALI to many PSAPs could have put citizens across Virginia at greater risk.
- The initial battery on discharge ("BOD") alarm¹ for the Fairfax central office was sent to the National Power Network Operation Center ("NPNOC") at 10:29 p.m. on June 29, 2012 when the one generator failed to start. Under Verizon's procedures, any BOD alarm should have been seen as a **critical** power alarm requiring immediate action. However, according to Verizon, this alarm was incorrectly categorized as a **major** power alarm condition when sent to the NPNOC.
- The Regional Network Center ("RNC") received a repair ticket (identified as a **major** alarm as mentioned above) from the NPNOC for the Fairfax central office at 10:32 p.m. on June 29, 2012. At that time, and on the morning of June 30, the RNC was only working **critical** alarms and a power technician was not dispatched to the office until after the backup batteries had drained completely.
- The telemetry system (alarm monitoring) in the Arlington central office was only supported by the Uninterruptable Power Supply ("UPS") (i.e., battery power source)

¹ BOD or battery on discharge usually indicates one of two conditions. One is an all rectifier failure with or without a generator or commercial power failure, and second is a commercial power failure with generator failure. In each situation the office batteries are being depleted and the alarm condition is a CRITICAL indicator that network service is in jeopardy.

which was designed with a 30 minute reserve. The UPS failed at 11:23 p.m. on June 29, 2012.

- The very early failure of the telemetry system resulted in Verizon being unable to receive further alarms and remotely access its switches to monitor, test, or reroute traffic to 34 sites in the area. Verizon's inability to monitor its facilities and network in the Northern Virginia area significantly impacted the restoral process from the June 29 Derecho.
- The delay in identifying and repairing the critical conditions in the Fairfax and Arlington offices resulted in unnecessary damage to Verizon's network and extended the 911 problems and outages. There were hundreds of damaged or impacted pieces of equipment in those two offices (i.e., circuit cards and digital cross connects).
- The loss of the transport systems in the Arlington and Fairfax central offices was profound and collectively resulted in 17 switches becoming SS7 isolated, and therefore incapable of completing (originating or terminating) any interoffice local, long distance, or 911 emergency calls. The loss of those transport systems was also responsible for the loss of ALI to the PSAPs.
- Verizon did not activate its emergency Area Control Center located in Maryland until 10 a.m. on June 30, 2012.
- Verizon did not always provide sufficient, accurate, or timely communications to the affected PSAPs regarding its 911 problems and outages following the June 29 Derecho.
- Some battery reserves supporting major equipment systems in the Arlington (other than telemetry) and Fairfax central offices were depleted within approximately 3 to 5 hours. In addition, some equipment in those offices failed even before the batteries exhausted because of sensitivity to low voltage conditions.
- In many instances, Verizon's workforce was not timely dispatched, prepared, or trained

to recognize or correct the critical conditions from the June 29 Derecho.

- Verizon is making progress in implementing its corrective action plan, however, at this time, not all items have been fully defined or timelines determined.

VSCC STAFF FINAL FINDINGS
FROM
JANUARY 17, 2013 STAFF REPORT

Generator Maintenance, Testing, and Practices

- A review of the 2011 and 2012 backup generator maintenance logs prior to the June 29 Derecho in a cross section of central offices in Virginia shows a lack of compliance with Verizon's maintenance and testing procedures.
- Routine testing was not always performed and in a number of instances the testing duration was insufficient (i.e., a test should run the generator under load continuously for at least one hour **every** month and for five hours once a year). There were some instances where generators were run considerably less than an hour in a single month and in some cases not at all.
- Verizon has "reviewed and refreshed its monthly and annual preventative maintenance requirements for generator, battery and DC plant rectifiers for all its host offices."
- Verizon enhanced its Blackout Testing¹ procedures (as of September 2012) to include "failed automated controls" and "prioritized system load transfer" scenarios. Verizon plans to perform blackout tests for its 16 Virginia 911 network critical sites in 2013, scheduling each site once all the power audit findings have been addressed. It is also in the process of identifying which other facilities will be blackout tested in 2013.
- Verizon has deployed standardized log books in its offices and implemented an online tool to track monthly and annual generator testing.

¹ Blackout testing simulates the loss of commercial power and, among other things, determines that the generators automatically start and office loads are automatically shifted from commercial power sources to the generators(s).

- Verizon has formalized its generator test reporting and failure reporting procedures. These procedures include an acknowledgement process for all generator run alarms by the responsible Network Operations Center (“NOC”) and a separate operational process “to audit the generator run testing frequency compliance.” Records will be maintained locally as well as by the NOC.
- Verizon is installing a street side quick connection for a portable generator at all 911 mission critical offices to be completed as follows: ten in 1Q 2013, five in 2Q 2013, and one by July 2013.
- A third permanent generator will be installed in the Arlington office by 3Q 2013.

Telemetry

- Verizon is redesigning its telemetry network to “include more diverse connections and failover (alternative) locations.”
- Verizon plans to reduce the telemetry system dependency on UPS by moving the telemetry equipment to a DC central office power source. This effort will provide additional operational duration for telemetry in the event of a commercial and generator power outage.
- DC powered routers were installed at the Arlington central office on January 3, 2013.
- Verizon plans to redesign its telemetry network so that core routers, which receive data from edge routers, will have central office generator and battery back up by June 30, 2013.²
- Verizon is implementing site by site remediation to move all telemetry traffic to the IP

² “Edge routers” are deployed in each Verizon central office. They collect all of the alarms and other messages generated by the network equipment. Those edge routers then send that data to “core routers” – regional aggregation points that distribute them to the appropriate operations support systems for analysis and action by NOC personnel.

network. The 911 mission critical offices should be completed by December 31, 2013.

- The ongoing telemetry redesign schedule for the remaining Verizon offices (nationwide) is based on office size (starting from largest to smallest) with an indicated completion by December 31, 2015. This redesign will eliminate a single point of failure for the telemetry system allowing Verizon to maintain visibility to its central offices from an alternative location if necessary.

Power Audits

- Following the Derecho, Verizon initiated and completed backup power system audits for its other 911 mission critical facilities in Virginia that were not affected by the Derecho. It has completed backup power system audits for all of its 911 mission critical facilities.
- The audits did not include assessment of switching or transport equipment.
- The audits surveyed the overall condition of the power, grounding, and battery room systems at each facility and were generally “non-intrusive and visual in nature.”
- The audits also included an infrared thermographic scan of major system components.
- Inspections of mechanical, HVAC equipment, and building conditions were also performed in conjunction with the power audits in the 911 mission critical offices.
- The audits conducted in a few of the offices were primarily narrative in nature while the other audits used a survey template format with a pass/fail test.
- The infrared thermographic scans identified variations in temperature readings (hot spots) in electrical equipment (i.e., connections, fuses, and circuit breakers) to diagnose problems (i.e., loose mechanical connections or circuit overloads) that could potentially cause issues (i.e., from fires to equipment failures).
- The audits were not operational in nature and Verizon recognizes that “depending on the

severity of any abnormalities found (if any) then a more in-depth audit of the affected systems will have to be scheduled.” We are not aware of further in-depth audits scheduled in any of the sixteen 911 mission critical offices.

- The audits for the 911 mission critical offices in Virginia identified hundreds of abnormalities. The underlying issues found in the audits ranged from minor to critical.
- Many of the audits show a broad range of problems from overall building deterioration to apparent lack of routine preventative maintenance.
- Examples of minor issues found in the various audits include low electrolyte levels in batteries, cracked flame arrestors on batteries, and safety equipment missing or depleted.
- The audits found instances where power equipment (i.e., battery strings, rectifiers, inverters) in the offices was known to be manufacturer discontinued and spare parts were not available on site or from the manufacturer. In many instances, the audits recommended replacing the manufacturer discontinued equipment. One audit stated “the obsolete rectifiers put the switch at risk due to lack of spare parts.”
- Verizon indicates that it has access to spare parts in other locations and from third party vendors. In addition, Verizon retains parts from old, replaced equipment to use as spares.
- A number of the audits identified that annual Battery Run Down Tests (“RDT”) had not been performed in some time. In one office, the audit stated the “battery plant reserve sizing is not sufficient to carry the load for four hours” and it was noted that the RDT had not been performed since 2009.
- There was evidence of roof leaks in several offices.
- The audits identified nonfunctioning and inadequate HVAC systems in some offices. For example, some air handling and condensing units were out of service at the time of the

audits and the temperatures in the battery and equipment rooms exceeded acceptable levels.

- The thermographic scans identified circuit breakers and fuses in a number of offices as being hotter than the surrounding equipment and posing a potential fire or failure risk.
- At one office, a brick veneer wall was falling on to the adjacent property of a U.S. post office. There are numerous indications of building deterioration in many offices.
- In addition to scheduled inspections, Verizon will conduct backup power system audits in facilities other than 911 mission critical offices based on “field requests or direction from the engineering teams.” For example, items noticed in other inspections and activities in an office may trigger a field request for a power audit.
- The audits in several offices identified instances where power rectifiers were not operational, needed to be repaired, or were improperly located.
- Verizon has addressed and repaired many of the problems identified in the audits and has stated it is committed to rectifying all problems identified therein.

Other Initiatives

- Outside the power audit process, Verizon inspected during August and September of 2012 all its Virginia central offices under its annual “Neat, Clean, Safe and Reliable” central office inspection program.
- According to Verizon, this program has resulted in hundreds of work action items in over 300 Virginia offices.
- The work action items are categorized and prioritized into three groups: Network Reliability, Safety/Security, and Neat Clean.
- Verizon has completed the work on many of these work actions and plans to address all

items identified in the Virginia offices.

- Verizon accelerated its “Original Equipment Manufacturer Preventative Maintenance” program that it had planned for 2013 into 4Q 2012. Under this program, the original equipment manufacturer (“OEM”), or a qualified OEM vendor, performs an annual checklist of maintenance items. During 4Q 2012, Verizon completed this program in 222 offices nationwide, including 29 in Virginia.
- Verizon has deployed additional diversity in its long haul network and has retired some specific transport systems that were at the end of their life.
- Verizon has completed a bar code inventory of all plug-in equipment for its legacy local network.

Emergency Practices and Procedures

- Verizon revised its National Power Network Operation Center (“NPNOC”) storm/emergency handling procedures.
- The revised NPNOC procedures were expanded to address “unplanned” significant natural events or storms. The NPNOC will declare a “storm/emergency event” during an unplanned event when there are five or more battery on discharge (“BOD”) alarms in the same geographic area.
- When a storm/emergency event is declared (from either a forecasted or unplanned event), the NPNOC will contact the Global Event Network Management Center (“GENMC”) and the GENMC will then convene a conference bridge to outline a strategy plan.
- The NPNOC will no longer suspend notifications of BOD alarms to the field during storm emergencies. All escalations to the dispatch centers and field power managers will continue during such emergencies.

- Verizon is adding an additional power technician to its evening shift in Northern Virginia. In addition, “Verizon has modified its work schedule to designate Arlington and Fairfax offices as the primary reporting location....”
- Verizon placed a readily available copy (or copies) of a site specific “Central Office Emergency Procedure Manual” in its 911 mission critical offices that identifies and maps the power and generator procedures for the specific office.
- Verizon has centralized its emergency activation processes with its Business Continuity and Emergency Management (BCEM) organization to expedite prompt responses to unforeseen emergencies.

911/PSAP

- As part of its corrective actions, Verizon has agreed to implement a number of initiatives requested by the PSAPs.
- Verizon is developing a centralized system to access the PSAP’s 911 infrastructure information and is working with the PSAPs to make this available to them.
- Verizon is working with PSAPs in Northern Virginia to recommend design changes to improve diversity and infrastructure inventory.
- All Northern Virginia PSAPs have been provided with design change recommendations.
- Verizon plans to complete its diversity review for all PSAPs in Virginia by year end 2013.
- Verizon plans to conduct a drill or exercise with each requesting jurisdiction on a semiannual basis that models potential or actual 911 outages. In early December, Verizon conducted a pilot exercise with the City of Norfolk.
- The PSAPs appear to be encouraged by the actions being undertaken by Verizon’s

current operational management but still have concerns about the sustainability, adequacy, and timing of the proposed corrective actions.

Virginia Administrative Code

Database updated through May 8, 2013

CHAPTER 425

RULES GOVERNING ENHANCED 911 (E-911) SERVICE

20VAC5-425-10. Definitions.

The words and terms in § 56-484.12 of the Code of Virginia shall have application to this chapter. In addition, the following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Automatic location identification (ALI)" means the feature by which the name, service address, and supplemental emergency service information associated with the calling party's telephone number are forwarded to the Public Safety Answering Point (PSAP) for automatic display on the PSAP terminal equipment.

"Automatic number identification (ANI)" means a feature by which the telephone number associated with a network access line is initially generated and forwarded to a PSAP for display on a 911 terminal.

"Average busy hour" means the one-hour period during the week statistically shown over time to be the hour in which the most telephone calls are received.

"Commission" means the Virginia State Corporation Commission.

"Competitive local exchange carrier (CLEC)" means an entity, other than a locality, authorized to provide local exchange telecommunications services in Virginia pursuant to § 56-265.4:4 of the Code of Virginia and 20VAC5-417.

"Database error" means an error in ALI address information caused by a Local Exchange Carrier (LEC) that affects the ability of a PSAP to route emergency services correctly.

"E-911 ALI database" means the set of ALI records residing on a computer system.

"E-911 services" means the tariffed services purchased by a jurisdiction for the purpose of processing wireline E-911 calls.

"Foreign central office service" means local exchange telecommunications service that is furnished from one central office to a location typically served by another central office.

"Foreign exchange service" means local exchange telecommunications service that is furnished from one exchange to a location typically served by another exchange.

"Incumbent local exchange carrier (ILEC)" or "incumbent" means a public service company providing local exchange telecommunications services in Virginia on December 31, 1995, pursuant to a certificate of public convenience and necessity, or the successors to any such company.

"Local exchange carrier (LEC)" means a certificated provider of local exchange telecommunications services, whether an incumbent or a new entrant.

"Local exchange telecommunications services" means local exchange telephone service as defined by § 56-1 of the Code of Virginia.

"Locality" means a city, town, or county that operates an electric distribution system in Virginia.

"Municipal local exchange carrier (MLEC)" means a locality certificated to provide local exchange telecommunications services pursuant to § 56-265.4:4 of the Code of Virginia.

"Network access line (NAL)" means a wireline line, trunk, or equivalent.

"New entrant" means a CLEC or an MLEC.

"P.01 grade of service" means a standard of service quality reflecting the probability that no more than one call out of 100 during the average busy hour will be blocked.

"Public safety answering point (PSAP)" means a facility equipped and staffed to receive and process 911 calls and route them to emergency services personnel.

"Staff" means the commission's Division of Communications and associated personnel.

20VAC5-425-20. General provisions.

A LEC shall:

1. Provide to its end-user customers access to E-911 service on all NALs where applicable;
2. Provide each relevant PSAP with a means for immediate access to LEC personnel to assist in PSAPs, while processing an emergency-related 911 call, obtaining E-911 record-related information on a 24-hour basis, 365 days a year. Any changes to this contact information shall be communicated in writing to affected PSAPs within five business days;
3. Provide LEC company identification codes on each ALI record submitted to the E-911 ALI database provider;
4. Provide ALI record information such that its E-911 database error rate, for a given PSAP, is no greater than 1.0%. The ALI database error rate shall be the number of a LEC's incorrect ALI address records divided by the total number of a LEC's ALI records queried during a calendar

quarter;

5. Submit, or cause to be submitted, no less than 95% of all E-911 ALI database affecting changes (including nonpublished and nonlisted telephone numbers) to the E-911 ALI database provider within 48 hours of the LEC's receipt of notice of the change and 100% within 72 hours, excluding holidays and weekends;
6. Correct, or cause to be corrected, any ALI record within 48 hours of receiving written notification, including but not limited to electronic mail ("e-mail") and facsimile, excluding holidays and weekends;
7. Exclude, or cause to be excluded, from the ALI database, ALI records that contain telephone numbers that cannot convey ANI;
8. Provide ALI record information relating to an E-911 emergency immediately upon the verbal request of a verified authorized agent of the PSAP;
9. Advise customers applying for foreign exchange, foreign central office service, or any other wireline service, when there is the potential for problems in reaching the appropriate PSAP;
10. Render to a requesting PSAP, where the LEC provides ALI database services, detail sufficient to verify the accuracy of ALI database telephone number, name, and address information. Such information shall be provided to the PSAP by the LEC on no more than a semi-annual basis and at a reasonable cost;
11. Render to a PSAP, upon request, on no more than a semi-annual basis, at no charge, detail sufficient to verify the accuracy of its E-911 services billing; and
12. Notify each relevant PSAP at least 30 days prior to the commencement or discontinuance of local exchange telecommunications services.

20VAC5-425-30. Rates and tariffs.

A. A new entrant's rates for any E-911 services shall be no higher than the lowest applicable rates established by the largest ILEC, as measured by the number of its NALs, serving the geographic area of the relevant PSAP.

B. A LEC, if it provides and charges for E-911 services, shall structure its E-911 services so that it charges PSAPs only for those services that it renders.

20VAC5-425-40. Provisioning.

A LEC providing E-911 services shall:

1. Design, construct, maintain, and operate its facilities to minimize interruptions to E-911 services;
2. Determine E-911 service requirements in consultation with the relevant PSAP. These requirements shall be communicated to the PSAP prior to implementation and shall include detail sufficient to allow the PSAP to order E-911 service consistent with a minimum of a P.01 grade of service; and
3. Provide E-911 service consistent with the level of service ordered by a PSAP.

20VAC5-425-50. Waiver.

The commission may, at its discretion, waive or grant exceptions to any provision of this chapter.
